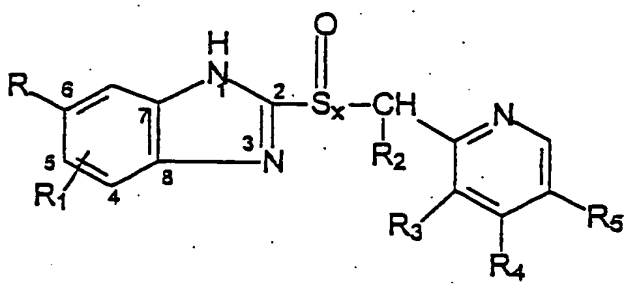
THAT WHICH IS CLAIMED:

1. A compound represented by the formula (Ia):



(Ia)

wherein:

S_x represents a chiral sulfur atom comprising at least one of the diastereomers represented by S_{xa} and S_{xb}, wherein S_{xa} is the (-) diasteromer and S_{xb} is the (+) diasteromer;

R is alkoxy;

R_1 is selected from the group consisting of hydrogen, alkyl, halogen, carboalkoxy, alkoxy, and alkanoyl;

R_2 is hydrogen or alkyl; and

R_3, R_4, and R_5 may be the same or different and are each selected from the group consisting of hydrogen, alkyl, alkoxy, and alkoxyalkoxy,

wherein when R_4 is alkoxy and R_3 and R_5 are not hydrogen, the alkyl substituent of such alkoxy group is selected from the group consisting of at least one of the diastereomers represented by R_{4q} and R_{4z}, wherein R_{4q} is the (-) diastereomer and lies above the chiral plane; and R_{4z} is the (+) diastereomer and lies below the chiral plane;

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof.

2. A compound according to Claim 1, wherein diastereomers of said compound represented by formula (Ia) are selected from the group consisting of:

(a) S_{xa}-R_{4q};

(b) S_{xa}-R_{4z};

(c) S_{xb}-R_{4q}; and

(d) S_{xb}-R_{4z},

or one or more pharmaceutically acceptable salts, solvates, hydrates, or

combinations thereof.

3. A composition comprising two or more compounds according to Claim 1, or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof.

4. A composition according to Claim 3, wherein each of said two or more compounds comprises the same or different diastereomers selected from the group consisting of:

(a) S_{xa}-R_{4q}

(b) S_{xa}-R_{4z};

(c) S_{xb}-R_{4q}; and

(d) S_{xb}-R_{4z},

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combination thereof.

5. A composition according to Claim 4, wherein said salt thereof is one or more alkaline metal salts.

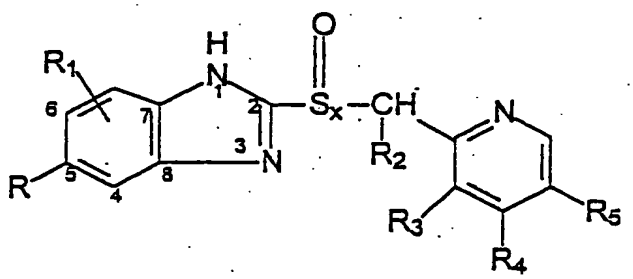
6. A pharmaceutical formulation comprising a composition according to Claim 4 and at least one pharmaceutically acceptable carrier, diluent, or excipient.

7. A pharmaceutical formulation according to Claim 6, wherein said salt thereof is one or more alkaline metal salts.

8. A pharmaceutical formulation according to Claim 6, wherein said composition comprises 6-methoxy-2[[(4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]sulfinyl]-1*H*-benzimidazole, or one or more pharmaceutically acceptable salts, solvates, hydrates, or combination thereof.

9. A pharmaceutical formulation according to Claim 8, wherein said salt thereof is one or more alkaline earth metal salts.

10. A composition according to Claim 4, wherein said composition is essentially free of compounds represented by formula (Ib):



(Ib)

wherein:

S_x represents a chiral sulfur atom comprising at least one of the diastereomers represented by S_{xa} and S_{xb}, wherein S_{xa} is the (-) diastereomer and S_{xb} is the (+) diastereomer;

R is alkoxy;

R_1 is selected from the group consisting of hydrogen, alkyl, halogen, carboalkoxy, alkoxy, and alkanoyl;

R_2 is hydrogen or alkyl; and

R_3, R_4, and R_5 may be the same or different and are each selected from the group consisting of hydrogen, alkyl, alkoxy, and alkoxyalkoxy,

wherein when R_4 is alkoxy and R_3 and R_5 are not hydrogen, the alkyl substituent of such alkoxy group is selected from the group consisting of at least one of the diastereomers represented by R_{4q} and R_{4z}, wherein R_{4q} is the

(-) diastereomer and lies above the chiral plane; and R_{4z} is the (+) diastereomer and lies below the chiral plane;

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof of said compounds represented by formula (Ib).

11. A composition according to Claim 10, wherein said salt thereof is one or more alkaline metal salts.

12. A pharmaceutical formulation comprising said two or more compounds according to Claim 10 and at least one pharmaceutically acceptable carrier, diluent, or excipient.

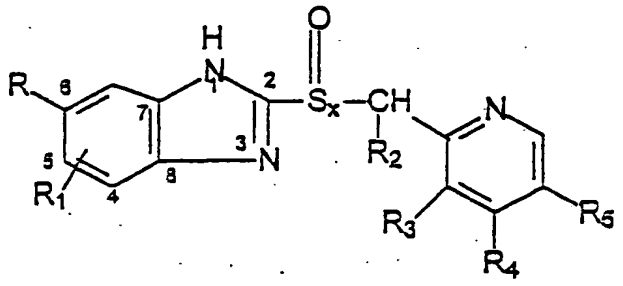
13. A pharmaceutical formulation according to Claim 12, wherein said salt thereof is one or more alkaline metal salts.

14. A pharmaceutical formulation according to Claim 12, wherein said composition comprises 6-methoxy-2[[(4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]sulfinyl]-1*H*-benzimidazole, or one or more pharmaceutically acceptable salts, solvates, hydrates, or combination thereof.

15. A pharmaceutical formulation according to Claim 14, wherein said salt thereof is one or more alkaline metal salts.

16. A composition comprising:

(a) one or more compounds represented by formula (Ia):



(Ia)

wherein:

S_x represents a chiral sulfur atom comprising at least one of the diastereomers represented by S_{xa} and S_{xb}, wherein S_{xa} is the (-) diastereomer and S_{xb} is the (+) diastereomer;

R is alkoxy;

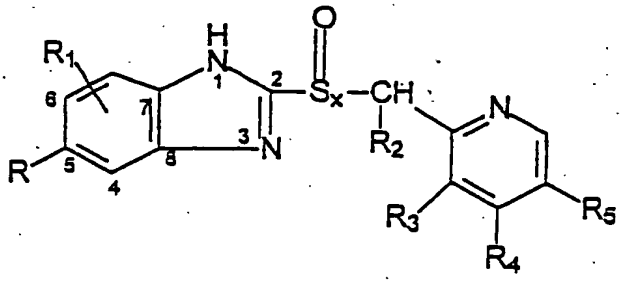
R_1 is selected from the group consisting of hydrogen, alkyl, halogen, carboalkoxy, alkoxy, and alkanoyl;

R_2 is hydrogen or alkyl; and

R_3, R_4, and R_5 may be the same or different and are each selected from the group consisting of hydrogen, alkyl, alkoxy, and alkoxyalkoxy, wherein when R_4 is alkoxy and R_3 and R_5 are not hydrogen, the alkyl substituent of such alkoxy group is selected from the group consisting of at least one of the diastereomers represented by R_{4q} and R_{4z}, wherein R_{4q} is the (-) diastereomer and lies above the chiral plane; and R_{4z} is the (+) diastereomer and lies below the chiral plane,

or one or more pharmaceutical acceptable salts, solvates, hydrates, or combinations thereof, and

(b) one or more compounds represented by formula (Ib):



(Ib)

wherein:

S_x represents a chiral sulfur atom comprising at least one of the diastereomers represented by S_{xa} and S_{xb}, wherein S_{xa} is the (-) diastereomer and S_{xb} is the (+) diastereomer;

R is alkoxy;

R_1 is selected from the group consisting of hydrogen, alkyl, halogen, carboalkoxy, alkoxy, and alkanoyl;

R_2 is hydrogen or alkyl; and

R_3, R_4, and R_5 may be the same or different and are each selected from the group consisting of hydrogen, alkyl, alkoxy, and alkoxyalkoxy,

wherein when R_4 is alkoxy and R_3 and R_5 are not hydrogen, the alkyl substituent of such alkoxy group is selected from the group consisting of at least one of the diastereomers represented by R_{4q} and R_{4z}, wherein R_{4q} is the (-) diastereomer and lies above the chiral plane; and R_{4z} is the (+) diastereomer and lies below the chiral plane,

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof of said composition.

17. A composition according to Claim 16, wherein R of each of said compounds represented by formulae (Ia) and (Ib) is the same alkoxy substituent and each of said substituents S_x, R_2, R_3, R_4, and R_5 of each of said compounds represented by formulae (Ia) and (Ib) are the same, or one or more pharmaceutically acceptable salts solvates, hydrates, or combinations thereof.

18. A composition according to Claim 17, wherein said composition comprises a ratio of compounds represented by formulae (Ia) and (Ib), said ratio selected from the group consisting of:

(a) said compounds represented by formula (Ia) are present in a range

from about 1 percent (w/w) to about 99 percent (w/w) and said compounds represented by formula (Ib) are present in a range from about 1 percent (w/w) to about 99 percent (w/w) such that the sum of the total percentage of such compounds represented by formulae (Ia) and (Ib) equals about 100 percent (w/w);

(b) said compounds represented by formula (Ia) are present in a range

from about 96 percent (w/w) to about 99 percent (w/w) and said compounds represented by formula (Ib) are present in a range from about 1 percent (w/w) to about 4 percent (w/w) such that the sum of the total percentage of such compounds represented by formulae (Ia) and (Ib) equals about 100 percent (w/w); and

(c) said compounds represented by formula (Ia) are present in a range

from about 1 percent (w/w) to about 85 percent (w/w) and said compounds represented by formula (Ib) are present in a range from about 15 percent (w/w) to about 99 percent (w/w) such that the sum of the total percentage of such compounds represented by formulae (Ia) and (Ib) equals about 100 percent (w/w),

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof.

19. A composition according to Claim 18, wherein each of said compounds represented by formulae (Ia) and (Ib) comprises the same or different diastereomers selected from the group consisting of:

(a) S_{xa}-R_{4q};

(b) S_{xa}-R_{4z};

(c) S_{xb}-R_{4q}; and

(d) S_{xb}-R_{4z},

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof.

20. A composition according to Claim 19, wherein said salt thereof is one or more alkaline metal salts.

21. A pharmaceutical formulation comprising a composition according to Claim 19 and at least one pharmaceutically acceptable carrier, diluent, or excipient.

22. A pharmaceutical formulation according to Claim 21, wherein said salt is one or more alkaline metal salts.

23. A pharmaceutical formulation according to Claim 21, wherein said compounds represented by formula (Ia) are 6-methoxy-2-[[(4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]sulfinyl]-1*H*-benzimidazole, or one or more pharmaceutically acceptable salt, solvate, hydrate, or combination thereof, and said compounds represented by formula (Ib) are 5-methoxy-2-[[(4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]sulfinyl]-1*H*-benzimidazole, or one or more pharmaceutically acceptable salt, solvate, hydrate, or combination thereof.

24. A pharmaceutical formulation according to Claim 23, wherein said salt thereof is one or more alkaline metal salt.

25. A composition according to Claim 19, wherein said compounds represented by formulae (Ia) and (Ib) are, in part or in whole, co-crystallized.

26. A composition according to Claim 25, wherein said salt thereof is one or more alkaline metal salts.

27. A pharmaceutical formulation according to Claim 21 wherein said compounds represented by formulae (Ia) and (Ib) are, in part or in whole, co-crystallized.

28. A pharmaceutical formulation according to Claim 27, wherein said salt thereof is one or more alkaline metal salts.

29. A pharmaceutical formulation according to Claim 23, wherein said compounds represented by formulae (Ia) and (Ib) are, in part or in whole, co-crystallized.

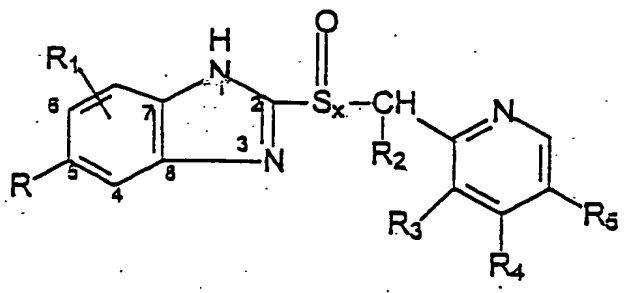
30. A pharmaceutical formulation according to Claim 29, wherein said salt thereof is one or more alkaline metal salts.

31. A composition comprising a plurality of complexes, wherein each complex comprises at least two molecules of a compound according to Claim 1, with said compounds being the same or different, or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof, and at least one atom of a metal cation for each of said two molecules of said compound.

32. A composition according to Claim 31, wherein said composition optionally comprises at least one solvent residue for each of said two molecules of said compound.

33. A pharmaceutical formulation comprising a composition according to Claim 32 and at least one pharmaceutically acceptable carrier, diluent, or excipient.

34. A composition according to Claim 32, wherein said composition is essentially free of compounds represented by formula (Ib):



(Ib)

wherein:

S_x represents a chiral sulfur atom comprising at least one of the diastereomers represented by S_{xa} and S_{xb}, wherein S_{xa} is the (-) diastereomer and S_{xb} is the (+) diastereomer;

R is alkoxy;

R_1 is selected from the group consisting of hydrogen, alkyl, halogen, carboalkoxy, alkoxy, and alkanoyl;

R_2 is hydrogen or alkyl; and

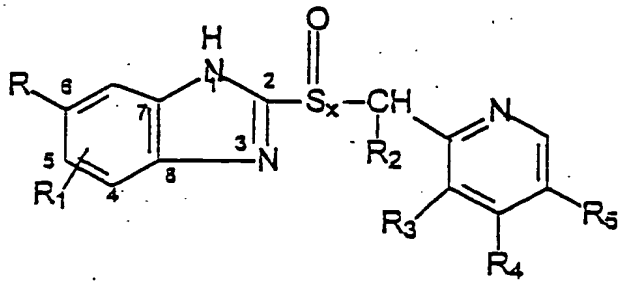
R_3, R_4, and R_5 may be the same or different and are each selected from the group consisting of hydrogen, alkyl, alkoxy, and alkoxyalkoxy,

wherein when R_4 is alkoxy and R_3 and R_5 are not hydrogen, the alkyl substituent of such alkoxy group is selected from the group consisting of at least one of the diastereomers represented by R_{4q} and R_{4z}, wherein R_{4q} is the (-) diastereomer and lies above the chiral plane; and R_{4z} is the (+) diastereomer and lies below the chiral plane;

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof of said compounds represented by formula (Ib).

35. A pharmaceutical formulation comprising a composition according to Claim 34 and at least one pharmaceutically acceptable carrier, diluent, or excipient.

36. A composition comprising a plurality of complexes, wherein each complex comprises at least two same or different molecules, at a ratio of 1 to 1 of one molecule of a compound represented by formula (Ia):



(Ia)

wherein:

S_x represents a chiral sulfur atom comprising at least one of the diastereomers represented by S_{xa} and S_{xb}, wherein S_{xa} is the (-) diastereomer and S_{xb} is the (+) diastereomer;

R is alkoxy;

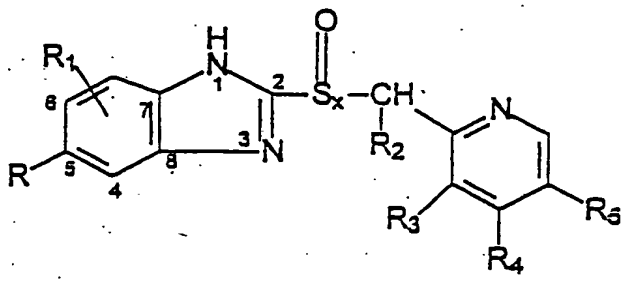
R_1 is selected from the group consisting of hydrogen, alkyl, halogen, carboalkoxy, alkoxy, and alkanoyl;

R_2 is hydrogen or alkyl; and

R_3, R_4, and R_5 may be the same or different and are each selected from the group consisting of hydrogen, alkyl, alkoxy, and alkoxyalkoxy, wherein when R_4 is alkoxy and R_3 and R_5 are not hydrogen, the alkyl substituent of such alkoxy group is selected from the group consisting of at least one of the diastereomers represented by R_{4q} and R_{4z}, wherein R_{4q} is the (-) diastereomer and lies above the chiral plane; and R_{4z} is the (+) diastereomer and lies below the chiral plane,

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof, and

one molecule of a compound represented by formula (Ib):



(Ib)

wherein:

S_x represents a chiral sulfur atom comprising at least one of the diastereomers represented by S_{xa} and S_{xb}, wherein S_{xa} is the (-) diastereomer and S_{xb} is the (+) diastereomer;

R is alkoxy;

R_1 is selected from the group consisting of hydrogen, alkyl, halogen, carboalkoxy, alkoxy, and alkanoyl;

R_2 is hydrogen or alkyl; and

R_3, R_4, and R_5 may be the same or different and are each selected from the group consisting of hydrogen, alkyl, alkoxy, and alkoxyalkoxy,

wherein when R_4 is alkoxy and R_3 and R_5 are not hydrogen, the alkyl substituent of such alkoxy group is selected from the group consisting of at least one of the diastereomers represented by R_{4q} and R_{4z}, wherein R_{4q} is the (-) diastereomer and lies above the chiral plane; and R_{4z} is the (+) diastereomer and lies below the chiral plane,

or one or more pharmaceutically acceptable salts, solvates, hydrates, or combinations thereof of said composition,

and at least one atom of a metal cation for each of said two molecules of said compounds represented by formulae (Ia) and (Ib).

37. A composition according to Claim 36, wherein said composition optionally comprises at least one solvent residue for each of said two molecules of said compounds represented by formula (Ia) and (Ib).

38. A pharmaceutical formulation comprising a composition according to Claim 37 and at least one pharmaceutically acceptable carrier, diluent, or excipient.

39. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 6.

40. A method according to Claim 39 wherein said salt thereof is one or more alkaline metal salts.

41. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 8.

42. A method according to Claim 41 wherein said salt thereof is one or more alkaline metal salts.

43. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 12.

44. A method according to Claim 43, wherein said salt thereof is one or more alkaline metal salts.

45. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 14.

46. A method according to Claim 45, wherein said salt thereof is one or more alkaline metal salts.

47. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 21.

48. A method according to Claim 47, wherein said salt thereof is one or more alkaline metal salts.

49. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 23.

50. A method according to Claim 49, wherein said salt thereof is one or more alkaline metal salts.

51. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 27.

52. A method according to Claim 51, wherein said salt thereof is one or more alkaline metal salts.

53. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 29.

54. A method according to Claim 53, wherein said salt thereof is one or more alkaline metal salts.

55. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 33.

56. A method according to Claim 55, wherein said salt thereof is one or more alkaline metal salts.

57. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 35.

58. A method according to Claim 57, wherein said salt thereof is one or more alkaline metal salts.

59. A method of inhibiting gastric acid secretions in mammals comprising administering to a mammal in need of treatment a therapeutically effective amount of a pharmaceutical formulation according to Claim 38.

60. A method according to Claim 59, wherein said salt thereof is one or more alkaline metal salts.

61. A process for forming alkali and alkaline metal salts, in situ, of compositions according to Claim 16 comprising preparing a solution of one or more hydrides selected from the group consisting of alkali metal hydrides and alkaline metal hydrides, respectively, adding said hydride solution to a solution of said compositions, and drying the resulting solid material.

62. A process according to Claim 61, wherein said alkaline metal hydride is selected from the group consisting of sodium hydride and magnesium hydride.

63. A process for forming alkali and alkaline metal salts of compositions according to Claim 16 comprising adding a solution of a solution of one or more hydrides selected from the group consisting of alkali metal hydrides and alkaline metal hydrides, respectively, to a suspension of a composition according to Claim 16, and drying the resulting solid material.

64. A process according to Claim 63, wherein said alkaline metal hydride is selected from the group consisting of sodium hydride and magnesium hydride.